USER'S MANUAL

IN WALL

IN CEILING

SPEAKERS

the **Speaker** company

Thank you. And congratulations!

Our thanks for buying your new speakers from TSC. We sincerely appreciate your confidence in us and our products. Please read this Owner's Manual! It contains many tips on getting your new speakers set up, connected, and sounding as good as they should. We hope you find it clear, concise, and helpful.

Again, thank you.

OUT OF THE BOX

You should save the carton and the inserts your speakers came in. You may need to ship your TSC speakers in the future and the packaging is designed to protect them from damage.

WHERE SHOULD YOU PUT THEM?

With In-Wall/In-Ceiling speakers, placement is a doubly important consideration. Here are three guidelines to follow:

- You should place your new speakers where they'll deliver the best sound to the area you've chosen.
- You should place them where they'll have minimum impact on your décor.
- You must place them where they won't impinge on existing wiring, plumbing, or HVAC (heating, ventilation, and air conditioning) ducts.

If you're concerned that you might not be able to select a good location and install the speakers to your satisfaction, call a carpenter or someone with drywall experience to help. However, if you're handy and aren't intimidated by drywall or what may be behind it, you'll need just ordinary coordination and a few tools to do the job well.

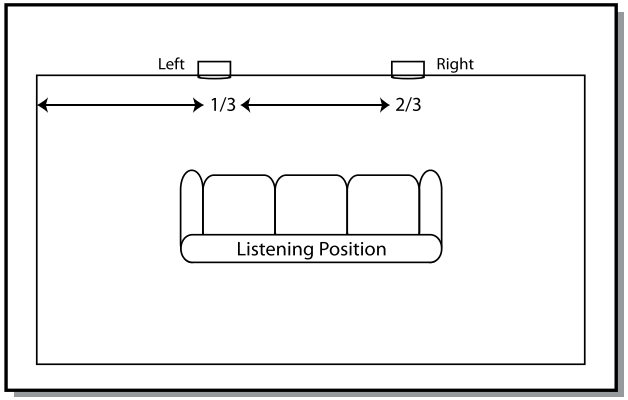
IN-WALL SPEAKER PLACEMENT - SOUND ISSUES

Acoustically, In-wall speakers are similar to bookshelf or floor-standing speakers. They're subject to the same conditions rooms impose on all speakers. With that in mind, here are some suggestions.

Main Speakers:

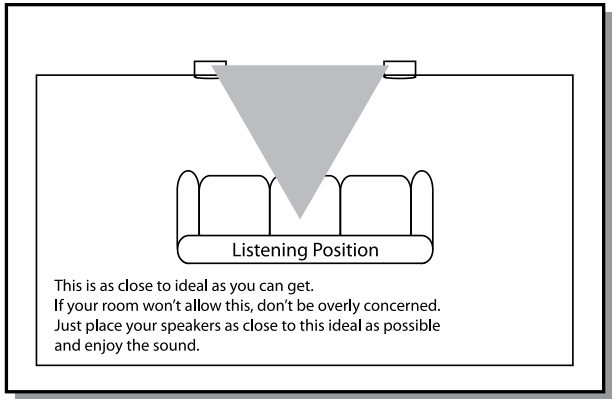
Try to put the main speakers (Left and Right for stereo; Left, Center, and Right for home theater) in the same wall of your listening/viewing room. If you can place your speakers in the long wall, so much the better.

Use the "Rule of Thirds" whenever possible. This suggests that the best placement for your Left speaker is approximately 1/3 of the way along the wall in which you're going to mount the speakers. Similarly, the best place for the Right speaker is usually 2/3 of the way across the same wall.



Make sure that the speaker-to-listening/viewing position distance is the same for each speaker.

Remember that the "Rule of Thirds" is a guideline only. Some professionals recommend placing the main (Left and Right) speakers so that they form an equilateral triangle with the prime listening/viewing position.


Listening Position
This is as close to ideal as you can get.
If your room won't allow this, don't be overly concerned.
Just place your speakers as close to this ideal as possible
and enjoy the sound.

Reflections from side walls have a major impact on your sound so try not to place your main speakers close to them. Remember that the "Rule of Thirds" is a guideline only. Try not to place your main speakers so they're exactly the same distance from the closest side wall. A bit of asymmetry here is actually preferable.

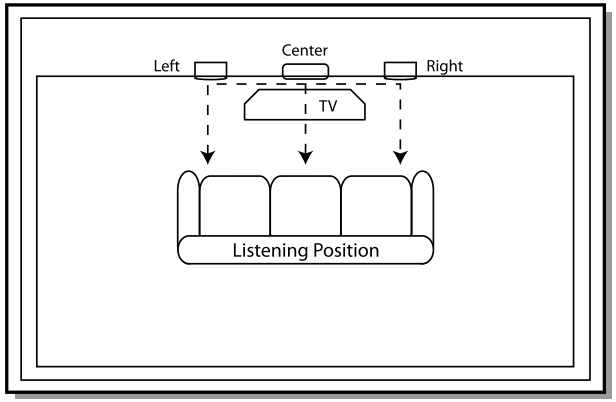
When you take the time to place your Main speakers, you'll enjoy better "imaging" (the apparent placement of individual instruments or voices), and more depth.

Also, remember that the tweeters in your In-wall speakers can be positioned so that they aim directly at your listening/viewing position.

Center Channel Speakers

For a home theater system, place the center channel speaker between your Left and Right speakers as close to your TV screen as possible. Try to keep the tweeters of all three speakers (Left, Center, and Right) as close to the same height as possible. Tweeters at – or very close to – your seated ear level are ideal. (This may pose a challenge if you have to place your Center Channel speaker either above or below your TV screen but you shouldn't worry too much.)

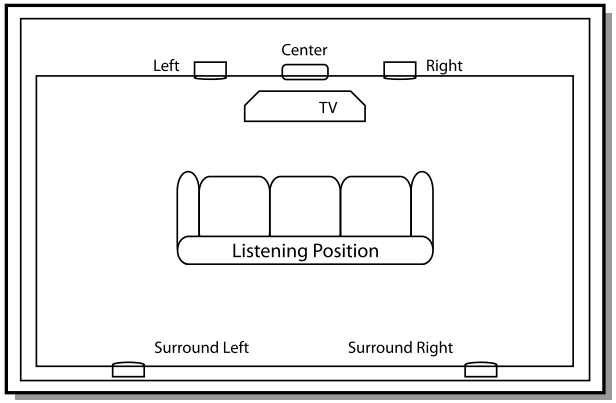
Try to place the center channel speaker at exactly the same distance from your listening/viewing position as the main Left and Right speakers. This helps create the most convincing image.



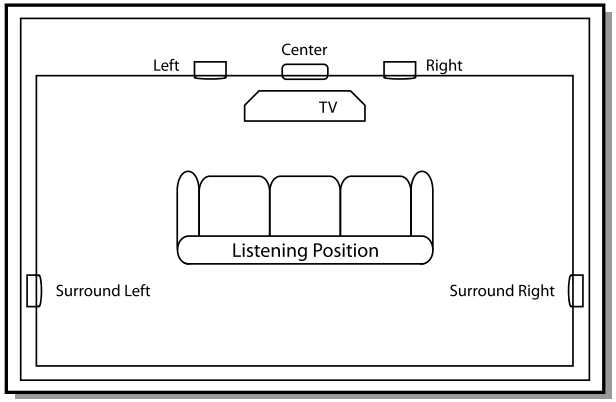
Surround Speakers

Surround speaker placement is challenging. You have two options.

If you're primarily a music listener, place your in-wall surrounds in the back wall of your listening/viewing room but a bit closer to the side walls than the "Rule of Thirds" indicates. Make sure the tweeters are at approximately the same height as are the tweeters of your front Left, Center, and Right speakers.



If you're a movie fan, mount the surround speakers in the side walls flanking your primary listening/viewing position. Make sure they're slightly behind your couch or chair and at least 1.5 to 2' above ear level.



Try not to place furniture between your speakers and your listening/viewing position. Make sure you can see all your speakers when seated there.

You have the option of using In-ceiling speakers for surround channels also. We'll cover placement issues for them shortly.

CUTTING THE HOLES

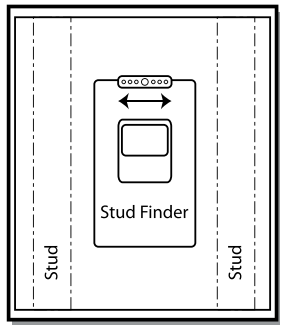
Architectural/Construction Issues

Although you can install In-wall speakers in plaster/lathe walls, most of you will encounter drywall (or "wallboard") construction in which 5/8" sheets of drywall material are fastened to 2" x 4" vertical wood studs located at 16" intervals behind the wallboard. (Note that some local construction codes mandate metal studs. Check with your local government's building authority.)

The following suggestions assume that you're installing your speakers in an existing home. If you're building a new home, your contractor or architect should make all the provisions you'll need for In-Wall or In-Ceiling speakers. Be aware, however, that it's often difficult to determine proper speaker placement before you're actually living in the space.

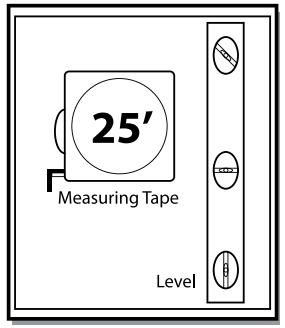
When you're selecting final placement for your In-Wall Speakers, first determine where the studs are. Don't "bet the farm" on always finding them on 16" intervals. Use a stud-finder and mark the location of all studs near your preferred speaker placement position in light pencil.

1) Make sure you won't be cutting into or through electrical wires, plumbing, or ductwork when you cut the holes for your speakers. First, cut a small test hole and use a flashlight to check for any obstructions.
2) Leave at least 1" of space between the edges of the hole you intend to cut for the speakers and any stud. This leaves room for the cam locks that attach the speaker to the drywall material.



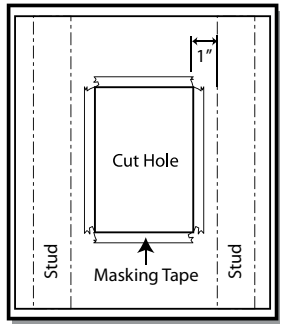
After you've picked out your speaker locations, use the template/paint shield to mark that location.

1) First, separate the installation template from the inner paint shield along the perforated lines. (You can throw out the divider that separates paint shield from the template.)
2) Next, place the template (the outer portion of the combined template/paint shield) carefully so that it outlines the exact spot the speaker will occupy after installation.
   - Do not "eyeball" the template location. Use a measuring tape and level to carefully line up the template.
   - Once you've located the template precisely, you can use short lengths of tape to hold it in position.
3) Using a soft pencil, carefully draw a line around the inner edge of the template. This will mark the cutout you will make in the drywall.



Once the hole is marked:

1) Place a tarp or drop cloth under the location before you start cutting.
2) Use a drywall saw to carefully cut along the lines you've just drawn.
   - You can either "punch through" the drywall material with the saw or drill a small hole at one corner of the cutout to place the blade accurately.
3) When you've finished, remove the cut-out rectangle.
4) With lengths of 1" wide masking tape, seal the exposed edges of the drywall material so that the tape overlaps the front and rear sides of the hole you've just made.



CONNECTING YOUR SPEAKERS

Getting Wired

We assume that you've already run appropriate wiring from your "head end" (your home theater or hi-fi system) to the in-wall or in-ceiling locations you've selected. If this is not the case, you may need help from an electrician or a custom-installation specialist.

Note that most building codes specify suitable wire types for behind-the-wall use. In general, these specs call for Underwriters Laboratory (UL) CL-2 or CL-3 wiring to minimize the chance of a fire starting behind the walls due to heat. Check with your local government's building code enforcement division for specifics.

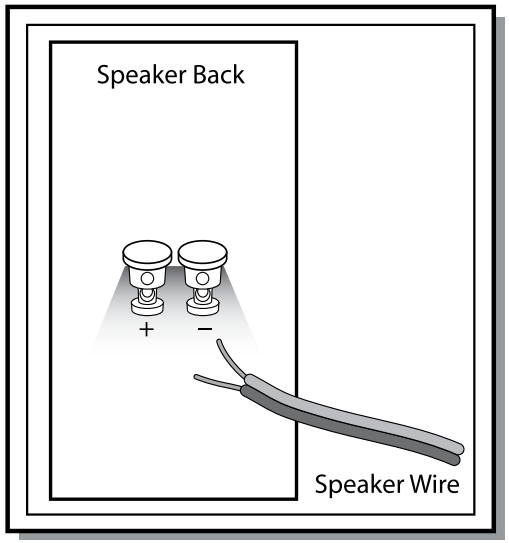
Please use 16 gauge wire if your amplifier-to-speaker runs are under 50'. For longer runs, we strongly suggest 14 gauge. (For your reference, standard "lamp cord" available at most hardware stores is 18 gauge.) For some installations, 4-conductor rather than conventional 2-conductor wire is much easier, particularly if you're dealing with stereo pairs of speakers. You can find CL-2 and CL-3 wiring in most gauges and conductor counts at good electrical supply houses.

Now that you have good cut-outs for your speakers, you'll need to connect the speakers to the speaker wires before final installation.

Before you begin connecting your speakers, turn your system components OFF. That way, you won't run any chance of "shorting" your amplifier and possibly damaging it as you're hooking up your speakers. And, of course, turn your system back ON when you're done!

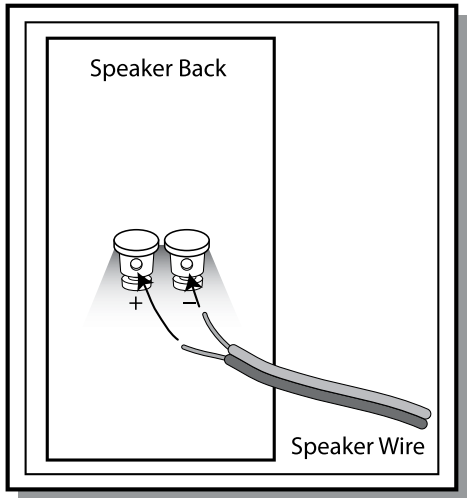
TSC In-Wall and In-Ceiling speakers have two spring-loaded terminals for connecting the speaker wire from your amplifier. **(Note: The SC-6DT is a one piece stereo speaker with two sets of connection terminals. Simply duplicate the instructions below for the second set of terminals.)**

One of the posts is red (positive or "+"), the other black (negative or "-"). Speaker wire, in turn, has two conductors, one for the "+" side of the signal, one for the "-".



Now look at your speaker wire. You'll see that it has two conductors separated by insulation and identified by color (if the insulation is clear) or by differences in the insulation itself (ridged vs. plain is the most common). Choose one conductor to carry the "+" signal and the other for the negative signal. It makes no difference which one you pick - **just maintain that choice for all your connections.**

- Prepare the wire by exposing about 3/8" of each conductor by stripping the insulation with a wire stripper or sharp knife.
- Twist all the individual strands of each conductor together.
- Connect the "+" conductor of the speaker wire to the "+" terminal on the speaker
- Press down on the terminal's red cap to expose the hole in the center shaft.
- Insert the conductor into the hole and release the cap.
- Connect the "-" conductor of the speaker wire to the "-" terminal on the speaker in the same manner.



Polarity and Proper Phasing

Don't let these words scare you. They both refer to making sure you get all the sound your speakers are capable of giving you.

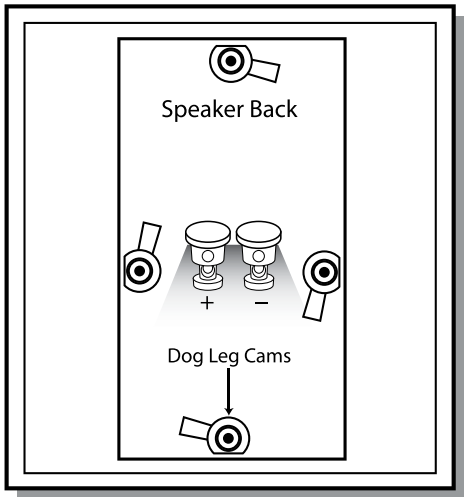
Why are we placing as much emphasis on hookup consistency here? We want you to get all the performance you've paid for!

When your amplifier-to-speaker connections are consistent (when "+" is always connected to "+" and "-" is always connected to "-"), your speakers are connected "in phase." That means the drivers in each speaker will push out when they get a common positive signal from an amplifier and pull in when they get a negative signal.

When speakers are connected "out of phase," the drivers fight each other – some move out while others move in. The result? You'll get less bass and blurred imaging. That's a pretty heavy price to pay for not taking just a few extra seconds to make sure your connections are correct.

Final Installation

Now that you've connected your speakers, it's time to install them in the cutouts you've already made.



To install the speakers:

1) Take off the protective grille by gently prying up a corner with a sharp knife blade, awl, or other pointed tool.
2) Once you've got one corner up, begin to work another corner loose. Once you've done this, the grille will pop off.
3) Look at the back of the speaker and note the "dog leg" cams sitting on top of molded posts just inside the speakers' perimeters.
4) Make sure these cams are pointed away from the speaker's outer edge.
5) Gently put the speaker into the hold you've cut.
6) Locate the screws on the speaker's front panel that turn the "dog leg" cams (one screw for each cam).
7) With a Phillips-head screwdriver, turn a screw counterclockwise (to the left), until you feel the cam loosen from its previous position and settle against the rear of the drywall material.
8) Turn the screw clockwise (to the right) to tighten the cam against the drywall.
9) Repeat the steps 7 and 8 until all the cams are tightened against the drywall material.

Congratulations, your speaker is now installed!

If you've decided not to paint the speaker grille, reinstall by pressing it into place along the top edge. Gently work the grille into its recess on the speaker's front panel by pressing the grille edges sequentially until it is fully seated. A little patience here will go a long way! You may need to bend the grille edges slightly to get a good fit but do this carefully.

If you've decided to paint the grille, make sure you don't clog the mesh. Too much paint or paint that's too thick will negatively affect your speakers' sound.

BREAK-IN

Many people believe speakers improve with age.

With TSC speakers, you'll notice a change in timbre, responsiveness, and sheer musicality as you use them because the drivers "settle in" with use.

How long should you wait? That depends, for example, on whether you listen AM radio at low volume or full orchestral music at live concert levels. In general, you'll begin to hear differences after 20-30 hours of use.

CARE

Your TSC In-Wall and In-Ceiling speakers don't need much maintenance. Wipe them occasionally with a damp cloth to keep the frame and grille clean.

Above all, enjoy! That's what your TSC speakers were designed for and why we take such pride in bringing them to you!

tSc *the* ***Speaker*** *company*

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